



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/852,009	05/07/2001	Coke S. Reed	M-3240-3D US	4824

32794 7590 11/08/2005

KOESTNER BERTANI LLP
18662 MACARTHUR BLVD
SUITE 400
IRVINE, CA 92612

EXAMINER

NGUYEN, BRIAN D

ART UNIT	PAPER NUMBER
----------	--------------

2661

DATE MAILED: 11/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/852,009

Applicant(s)

REED, COKE S.

Examiner

Brian D Nguyen

Art Unit

2661

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on the application filed on 5/7/01.
- 2a) ☐ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-116 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39-78, 85, 88, 92 and 98-116 is/are rejected.
- 7) ☒ Claim(s) 79-84, 86, 87, 89-91 and 93-97 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/7/01</u> . | 6) <input type="checkbox"/> Other. _____ |

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

2. Claims 39-67, 69, 74, 76, and 78-116 are objected to because of the following informalities:

Claim 39, "device set A" in lines 6 and 18 seem to refer back to "a device set A" in line 6. If this is true, it is suggested to change "device set A" in lines 6 and 18 to --the device set A--. "device set Z" in line 8 seems to refer back to "a device set Z" in line 8. If this is true, it is suggested to change "device set Z" in line 8 to --the device set Z--. "device set Z(CX_H)" in line 25 seems to refer back to "a device set Z(CX_H)" in line 25. If this is true, it is suggested to change "device set Z(CX_H)" in line 25 to --the device set Z(CX_H)--. In line 17, "the path R is in a member of the sequence cx" seems to be a typographical error. If this is true, it is suggested to delete "in". In line 22, "the device plurality Z" seems to refer back to "a device set Z" in line 8. If this is true, it is suggested to change "the device plurality Z" to --the device set Z--.

Claim 40, "paths P(x)" in line 3 seems to refer back to "paths P(x)" in line 29 of claim 39. If this is true, it is suggested to change "paths P(x)" in line 3 to --the paths P(x)--.

Claim 44, "device set Z(D)" in line 11 seems to refer back to "device set Z(D)" in line 9. If this is true, it is suggested to change "device set Z(D)" to --the device set Z(D)--.

Claim 46, "node q" in line 5 seems to refer back to "node q" in line 27 of claim 39. If this is true, it is suggested to change "node q" to --the node q--.

Claim 51, "device set A" in lines 6 and 18 seem to refer back to "a device set A" in line 6. If this is true, it is suggested to change "device set A" in lines 6 and 18 to --the device set A--. "device set Z" in line 8 seems to refer back to "a device set Z" in line 8. If this is true, it is suggested to change "device set Z" in line 8 to --the device set Z--. "device set Z(CX_H)" in line 25 seems to refer back to "a device set Z(CX_H)" in line 25. If this is true, it is suggested to change "device set Z(CX_H)" in line 25 to --the device set Z(CX_H)--. In line 17, "the path R is in a member of the sequence cx" seems to be a typographical error. If this is true, it is suggested to delete "in". In line 22, "the device plurality Z" seems to refer back to "a device set Z" in line 8. If this is true, it is suggested to change "the device plurality Z" to --the device set Z--.

Claim 52, "paths P(x)" in line 3 seems to refer back to "paths P(x)" in line 29 of claim 51. If this is true, it is suggested to change "paths P(x)" in line 3 to --the paths P(x)--.

Claim 55, "device set Z(D)" in line 11 seems to refer back to "device set Z(D)" in line 9. If this is true, it is suggested to change "device set Z(D)" to --the device set Z(D)--.

Claim 57, line 10, it is suggested to change "NF" to --N_F--. In line 15, it is suggested to change "message M" to --the message M--.

Claim 58, line 3, it is suggested to insert --the nodes-- before "N_F and N_E".

Claim 63, line 12, it is suggested to insert --the-- before "node N_A".

Claim 67, "distinct nodes N_A and N_F" in line 3 seems to refer back to "distinct nodes N_A and N_F" in line 9 of claim 57. If this is true, it is suggested to change "distinct nodes N_A and N_F" to --the distinct nodes N_A and N_F--. "a message M_A and a message M_F" in line 4 seems to refer

Art Unit: 2661

back to "a message M_A " and "a message M_F " in lines 11 and 12 of claim 57. If this is true, it is suggested to change "a message M_A and a message M_F " to --the message M_A and the message M_F --.

Claim 69, line 3, it is suggested to insert --the nodes-- before " N_F and N_E ".

Claim 74, line 12, it is suggested to insert --the-- before "node N_A ".

Claim 76, line 4, it is suggested to delete "I".

Claim 78, "distinct nodes N_A and N_F " in line 3 seems to refer back to "distinct nodes N_A and N_F " in line 9 of claim 68. If this is true, it is suggested to change "distinct nodes N_A and N_F " to --the distinct nodes N_A and N_F --.

Claim 79, it is suggested to insert --the-- before "device set A" in line 6; "node set T" in lines 7, 9; "device set Z" in line 8; "path set P" in lines 10, 12; "node N_D " and "node N_E " in line 22; "device set $Z(N_A)$ " in line 23.

Claim 88, line 12, it is suggested to insert --the-- before "node N_A ".

Claim 98, it is suggested to insert --the-- before "device set A" in line 6; "node set T" in lines 7 and 9; "device set Z" in line 8; "interconnect set I" in line 16; "node N_A " in line 21.

Claim 107, line 12, it is suggested to insert --the-- before "node N_A ".

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2661

4. Claims 39-78, 85, 88, 92, and 98-116 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 39 recites the limitation "the sequence cq" in line 23. There is insufficient antecedent basis for this limitations in the claim.

Claim 42 recites the limitation "the level N node set L_N " in line 7. There are insufficient antecedent basis for these limitations in the claim.

Claim 44 recites the limitation "the level L_{N-1} " in line 5. There are insufficient antecedent basis for these limitations in the claim.

Claim 46 recites the limitation "the node pis" in line 5. There are insufficient antecedent basis for these limitations in the claim. It is not clear what the applicant means by "pis".

Claim 51 recites the limitation "the sequence cq" in line 23. There is insufficient antecedent basis for this limitation in the claim.

Claim 53 recites the limitation "the level N node set L_N " in line 7. There are insufficient antecedent basis for these limitations in the claim.

Claim 55 recites the limitation "the level L_{N-1} " in line 5. There are insufficient antecedent basis for these limitations in the claim.

Claim 57, line 9, "the nodes ill" lack antecedent basis and unclear. "the message M_F in line 11 and "the message M_A " in line 12 lack antecedent basis.

Claim 60 recites the limitation "the individual nodes" in line 4. There are insufficient antecedent basis for these limitations in the claim.

Claim 62, "the plurality of control interconnect paths" in line 9 and "the logic L_A " in line 13 lack antecedent basis.

Claim 63, "the nodes ... N_D " in line 3 and "the logic element L_A " in line 12 lack antecedent basis.

Claim 64, "the plurality of control signal interconnect paths" in line 9 lack antecedent basis.

Claim 68, "the message M_F " in line 11 and "the message M_A " in line 12 lack antecedent basis.

Claim 71 recites the limitation "the individual nodes" in line 4. There are insufficient antecedent basis for these limitations in the claim.

Claim 73 recites the limitation "the plurality of control interconnect paths" in line 9 and "the logic L_A " in line 13. There are insufficient antecedent basis for these limitations in the claim.

Claim 74, "the nodes ... N_D " in line 3 and "the logic element L_A " in line 12 lack antecedent basis.

Claim 75 recites the limitation "the plurality of data-carrying interconnect paths" in line 6 and "the plurality of control signal interconnect paths" in line 9. There are insufficient antecedent basis for these limitations in the claim.

Claim 85 recites the limitation "the plurality of data interconnect paths" in line 6, "the plurality of control interconnect paths" in line 9, and "the logic L_A " in line 13. There are insufficient antecedent basis for these limitations in the claim.

Claim 88 recites the limitation "the interconnect paths" in line 4, "the plurality of interconnect paths" in line 9, and "the logic element L_A " in line 12. There are insufficient antecedent basis for these limitations in the claim.

Claim 92 recites the limitation "the plurality of data-carrying interconnect paths" in line 7 and "the plurality of control signal interconnect paths" in line 9. There are insufficient antecedent basis for these limitations in the claim.

Claim 98 recites the limitation "the device set $Z(L_{AE})$ " in line 23 and "the device subset $Z(L_{AD})$ " in line 24. There are insufficient antecedent basis for these limitations in the claim.

Claim 104 recites the limitation "the plurality of data interconnect paths" in line 6 and "the plurality of control interconnect paths" in line 9. There are insufficient antecedent basis for these limitations in the claim. It is suggested to insert --the-- before "plurality of control interconnect paths" in line 13.

Claim 107 recites the limitation "the interconnect paths" in line 4 and "the plurality of interconnect paths" in line 9 and "the logic element L_A " in line 14. There are insufficient antecedent basis for these limitations in the claim. It is suggested to insert --the-- before "plurality of control interconnect paths" in line 13.

Claim 111 recites the limitation "the plurality of data-carrying interconnect paths" in line 7 and "the plurality of control signal interconnect paths" in line 10. There are insufficient antecedent basis for these limitations in the claim. It is suggested to insert --the-- before "plurality of control interconnect paths" in line 13.

Allowable Subject Matter

5. Claims 39-116 would be allowable if rewritten or amended to overcome the objection(s) and/or the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lee et al (5,224,100), Teacherson (6,578,010), Horstmann et al (5,774,369), Born Eng (5,781,551), and Kaye Stefan (5,694,393).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian D Nguyen whose telephone number is (571) 272-3084. The examiner can normally be reached on 7:30-6:00 Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

2/15/05


BRIAN NGUYEN
PRIMARY EXAMINER

Notice of References Cited

Application/Control No.

09/852,009

Applicant(s)/Patent Under

Reexamination

REED, COKE S.

Examiner

Brian D Nguyen

Art Unit

2661

Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,224,100	06-1993	Lee et al.	370/408
	B	US-6,578,010	06-2003	Teacherson, George A.	705/14
	C	US-5,774,369	06-1998	Horstmann et al.	716/2
	D	US-5,781,551	07-1998	Born, Eng C.	370/408
	E	US-5,694,393	12-1997	Kaye, Stefan F.	370/408
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

#2

U.S. Department of Commerce, Patent and Trademark Office		Atty Docket No.	Serial No.
		M-3240-3D US	Not yet assigned
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Applicant	
(Use several sheets if necessary)		Coke S. Reed	
		Filing Date	Group
		Herewith	2661

1011 0.5. P. 09/852009 05/07/01

U.S. Patent Documents							
*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
LN	AA	4,814,980	3/1989	Peterson et al.	395	200.46	
LN	AB	4,933,836	6/1990	Tulpule et al.	395	800.12	
LN	AC	5,181,017	1/1993	Frey, Jr. et al.	340	825.02	
LN	AD	5,253,248	10/1993	Dravida et al.	370	228	
LN	AE	5,339,396	8/1994	Muramatsu et al.	395	312	
LN	AF	5,377,333	12/1994	Nakagoshi et al.	395	312	
LN	AG	5,471,623	11/1995	Napolitano, Jr.	395	200.03	
LN	AH	5,546,596	8/1996	Geist	395	200.73	
LN	AJ	5,553,078	9/1996	Horie	370	389	
LN	AJ	5,577,029	11/1996	Lu et al.	379	59	
LN	AK	5,583,990	12/1996	Birrittella et al.	395	800.29	
LN	AL	5,606,551	2/1997	Kartalopoulos	370	406	
LN	AM	5,617,413	4/1997	Monacos	370	400	
LN	AN	5,996,020	11/1999	Reed	709	238	

Foreign Patent Documents							
		Document	Date	Country	Class	Subclass	Translation
							Yes No
LN	AO	94 12939	6/1994	WIPO			
LN	AP	95 16240	6/1995	WIPO			

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)		
LN	AQ	Aruna V. Ramanan, "Ultrafast Space-Time Networks for Multiprocessors", a thesis, 1993, pp. 1-170
LN	AR	Malek M., et al.: "The Cylindrical Banyan Multicomputer: A Reconfigurable Systolic Architecture", May 1, 1989, pp. 319-327, Parallel Computing, XP000065558
LN	AS	Isaac Yi-Yuan Lee et al.: "A Versatile Ring-Connected Hypercube", Jun. 1, 1994, pp. 60-67, IEEE Micro, pp. 60-67, XP000448657

Examiner	Date Considered
<i>[Signature]</i>	2/15/05

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant.

U.S. Department of Commerce, Patent and Trademark Office					Atty Docket No.		Serial No.	
					M-3240-3D YS		Not yet assigned	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT					Applicant			
(Use several sheets if necessary)					Coke S. Reed			
					Filing Date		Group	
					Herewith		2661	
U.S. Patent Documents								
*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate	
	AA							
	AB							
	AC							
	AD							
	AE							
	AF							
	AG							
Foreign Patent Documents								
							Translation	
		Document	Date	Country	Class	Subclass	Yes	No
	AH							
	AI							
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)								
HN	AJ	Narashima Reddy: "I/O Embedding in Hypercubes", Aug. 19, 1988, pp. 331-338, Proceedings of the 1988 Intern'l Conf. on Parallel Processing, Pennsylvania State Univ., XP002016775						
HN	AK	Catier: "Une architecture "hypercube".", Sep. 1986, pp. 59-64, Electronique Industrielle, XP002016776						
HN	AL	Welty: "Hypercube architectures", Jun. 19, 1986, pp. 495-501, AFIPS Conference Proceedings 1986 National Computer Conference, XP002016777						
HN	AM	Proceedings of the Third IEEE Symposium on Parallel and Distributed Processing (Cat. No. 91TH0396-2), Dallas, TX, USA, Dec. 2-5, 1991, ISBN 0-8186-2310-1, Los Alamitos, CA, USA, IEEE Compt. Soc. Press. USA, pp. 564-571						
HN	AN	Young, S.D., et al, "Adaptive Routing in Generalized Hypercube Architectures", IEEE Symposium, Dec. 2-5, 1991, pp. 564-571, XP002024983						
HN	AO	Gaughan, P.T., et al.: "Adaptive Routing Protocols for Hypercube Interconnection Networks", Computer, vol. 26, No. 5, May 1, 1993, pp. 12-16, 17-23, XP000365279						
Examiner		Date Considered 2/15/05						
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant.								